

The ITA Tunnelling Awards 2016: Focus on the preceding November 10th TUCSS Symposium on Underground Development and Technology

Next November 10th in Singapore, a one day conference will be hosted by the Tunnelling and Underground Construction Society of Singapore (TUCSS) in Marina Bay Sands. On this day, 8 high profile keynote lectures will focus attention on the latest developments in tunnelling and highlight new challenges and innovations.

This conference will bring light and attention to the diversity of global tunnelling methods and their implementation in the local Singapore context.

- **Speakers and Subjects :**

- **Tarcisio Celestino, President of ITA :** Latest Development and innovations in conventional tunnelling



“Significant progress in different techniques associated to conventional tunnelling have contributed to an overall improvement of the end result in terms of productivity, economy, reliability, performance and durability of underground works. The presentation will focus mainly on developments produced by the ITA Prime Sponsor Companies and research carried out in the universities, some of which still underway.”

- **Nick Shirlaw, Golder Associates :** Mixed Ground Tunnelling in Hong-Kong and Singapore



“The presentation will review some of the mixed face tunnelling projects in Hong Kong, involving slurry and EPB TBMs. The data from Hong Kong is used to assess the trend, in Singapore, of using slurry shields in mixed faces of granite, but predominantly EPB for MRT tunnelling in mixed face conditions in the Jurong Formation and the Fort Canning Boulder Bed.”

- **Ng Hau Wei, Gamuda Engineering:** Challenges in Tunnelling in Kuala Lumpur’s Kenny Hill and Karstic Limestone Formations.



“The presentation will outline the challenges faced in carrying out tunnelling works in Kuala Lumpur’s varied geology in the construction of the first MRT line in Malaysia. The various technical solutions and risk management procedures implemented by MMC Gamuda in addressing these challenges will also be presented.”



ASSOCIATION
INTERNATIONALE DES TUNNELS
ET DE L'ESPACE SOUTERRAIN

AITES

ITA

INTERNATIONAL TUNNELLING
AND UNDERGROUND SPACE
ASSOCIATION

- **Mark Leggett, Mott MacDonald** : Benefits of BIM for Tunnelling Projects : A review of Global and Singapore practice



“The presentation will cover some level of BIM themes and look at two large UK infrastructure projects demonstrating examples – The Thames Tideway Tunnel and the Northern Line Extension. The parallels with the development of BIM in Singapore will be reviewed, discussed and lessons learnt shared.”

- **John Davis, ARUP** : Advancements and the Future of Design and Construction of Urban Tunnels in South-East Asia



“The planning of urban tunnels is becoming more complex as new tunnels need to thread “adjacent to” or “between” existing tunnels and infrastructure. Progressively higher levels of environmental control has also made construction more challenging. This presentation will draw on some of the recent developments in both design and construction issues raised across a number of cities in South East Asia.”

- **Seved Robin, Bouygues Travaux Publics** : Mega Tunnel for Tuen Mun to Chek Lap Kok Airport Link, Hong Kong



“As Hong Kong’s deepest, longest and largest sub-sea road tunnel, this project has the largest contract sum ever awarded in Hong Kong, a reflection of the project’s scale and complexity. The presentation will talk about the use of saturation technique for maintenance works on the TBMs’ cutter heads as well as the pipe jacking method adopted to construct the cross passage between the sub- sea tunnels, which is the first time used in TM tunnel in the world.”

- **Verya Nasri, AECOM** : Latest Development in Segmental Lining Design and Construction



“In this presentation, special attention is given to recommendations and guidelines for analyses of segments for determining ground and groundwater loads in one hand, and tensile stresses in joints due to jack thrust forces and cross section change in the other. Standard design methods for precast concrete segments are presented.”

- **Munfah Nasri, WSP | Parsons Brinckerhoff / Burak Gokce, Yapi Merkezi** : Istanbul Straits Crossing Tunnel – A Link between Europe and Asia



“The presentation will address the technical challenges from the design, construction and risk management aspects and discusses the due diligence process, financial arrangement, project organization, and the operation and maintenance aspects of the 13.2m external diameter double deck Istanbul Strait Road Tube Crossing.”



ASSOCIATION
INTERNATIONALE DES TUNNELS
ET DE L'ESPACE SOUTERRAIN

AITES

ITA

INTERNATIONAL TUNNELLING
AND UNDERGROUND SPACE
ASSOCIATION

- **Reminder/November 11th : ITA Tunnelling Awards Conference & Banquet Dinner**

The Conference will be a unique moment for the finalists to present their achievements, but also for the audience to discover and learn on the latest technical innovations and state-of-the-art practice.

This will provide an opportunity for participants to network and possibly initiate prospective fruitful collaborations and for global and local companies to present their services and technologies. The winners will be announced during the dinner.

- **6 projects and candidates from Singapore in the competition:**

- **Singapore Power Cross-Island Cable Tunnel Project** in the category “Major Project of the Year over €500M”
- **Downtown Line Stage 3 Contract 937 Construction of Fort Canning Station and Tunnels in Singapore** in the category “Tunnelling Project of the Year between €50M and €500M”
- **ION Orchard Link - Upgrading of Underground Link between Orchard MRT and Tang Plaza** in the category “Renovation/Upgrading Project of the Year”
- **Jurong Rock Caverns** in the category “Innovative Use of Underground Space”
- **Oh Jinnie and Senthilnath G.T** in the category “Young Tunneller of the Year”

Participation Modalities

Booking for attending the Symposium on November 10th and the ITA Awards Ceremony and Banquet on November 11th is now open on the following website:

<https://awards.ita-aites.org/book/book-conference-and-dinner.html>



ASSOCIATION
INTERNATIONALE DES TUNNELS
ET DE L'ESPACE SOUTERRAIN

AITES

ITA

INTERNATIONAL TUNNELLING
AND UNDERGROUND SPACE
ASSOCIATION

- **Review of Tunnelling in Singapore :**

Tunnelling in Singapore really began in the early 80's. As space scarcity increased, the need of new solutions emerged along with a world-wide trend of Tunnelling:

- The Mass Rapid Transit (Phases 1 &2) is the first major project that was born between 1983 and 1990.
- Pulau Saraya Tunnel of 2,6km constructed in 1988
- Tuas Bay Cable Tunnel of 2,1 km constructed in 1999

At present there are a number of tunnelling projects underway in the island state of Singapore, majors are:

- **The Thomson – Eastcoast Line**, a 43 km fully underground mass rapid transit system with 31 stations requiring the use of over 40 TBMs.
- **The Jurong Rock Cavern**, a storage hub for hydrocarbons that could store up to 8 million barrels of oil.
- **The Singapore Cable Tunnel project**, 34.5 km long and 6 m diameter tunnels and deep shafts.
- **The Deep Tunnel Sewerage System Stage 2**, a cross-island superhighway of tunnels to convey used water by gravity to the city's three water reclamation plants.
- **Downtown Line 3** - This is 21 km Long, with 16 stations and connects Downtown line to Thomson East Coast line (estimated completion 2017)
- **Circle Line 6** - A 4km Long section with 3 stations will close the loop on Circle Line (estimated completion 2025)
- **Cross Island Line** - This 50 km Long line will run across the island starting at Changi Airport new Terminal 5 in the east to Jurong Industrial Estate in the west (estimated completion 2030)
- **Changi Airport Terminal 5 Tunnels** - To support the development of a mega terminal at Changi Airport, tunnels are required to transport people, baggage, services as well as vehicles (estimated completion 2025)

About the Tunnelling and Underground Construction Society of Singapore:

Since 1997, the Tunnelling and Underground Construction Society of Singapore (TUCSS) is dedicated to promote Tunnelling and underground construction research, education and dissemination of Tunnelling and underground construction related information. The TUCSS is a member of the ITA.

About the International Tunnelling and Underground Space Association:

The International Tunnelling and Underground Space Association (ITA) is a non-profit and non-governmental international organization, which promotes the use of underground space for a solution to sustainable development. Founded in 1974 and operating out of Lausanne, Switzerland, ITA currently associates 73 Member Nations, 300 affiliated members, 17 Prime Sponsors and 60 supporters, as well as individual members.

Press Contact: Diane LOTH, +33 647 27 74 29

d.loth@giesbert-associes.com



ASSOCIATION
INTERNATIONALE DES TUNNELS
ET DE L'ESPACE SOUTERRAIN

AITES

ITA

INTERNATIONAL TUNNELLING
AND UNDERGROUND SPACE
ASSOCIATION